Working together to prevent diabetes and improve hypertension

Evidence-based solutions for prediabetes and hypertension: shifting the practice paradigm

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Objectives

- Highlight the importance of focusing on hypertension and prediabetes to reduce cardiovascular mortality
- Share novel approaches for preventing diabetes and improving hypertension care
- Discuss how these new approaches fit into the rapidly evolving health care landscape

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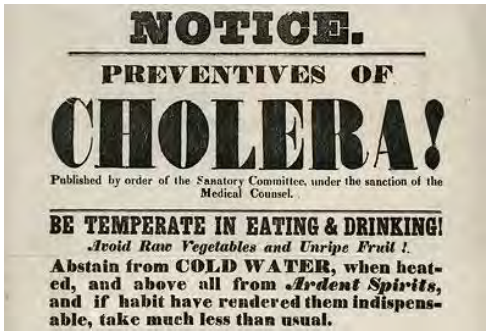
- Founded on May 7th, 1847 at The Academy of Natural Sciences in Philadelphia
- Largest medical association in America
- Mission: To promote the art and science of medicine and the betterment of public health

FOUNDING OF THE AMERICAN MEDICAL ASSOCIATION


NOTICE.

PREVENTIVES OF

CHOLERA!

Published by order of the Sanatory Committee, under the sanction of the Medical Counsel.

BE TEMPERATE IN EATING & DRINKING!

Avoid Raw Vegetables and Unripe Fruit!.

Abstain from COLD WATER, when heated, and above all from *Ardent Spirits*, and if habit have rendered them indispensable, take much less than usual.

AMA focus on improving health outcomes

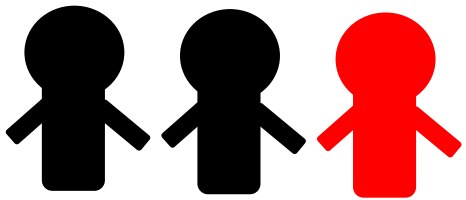
One of 3 focus areas under new strategic plan (2012):

- Improving population health outcomes
- Physician satisfaction and practice sustainability
- Accelerating change in undergraduate medical education

Improving health outcomes: Long-term goals

- Prevent heart disease, stroke and type 2 diabetes
- Improve population health outcomes for these conditions

Heart disease is the #1 cause of death in the United States



1 in 3 American adults are at risk for **type 2 diabetes**

Source: CDC

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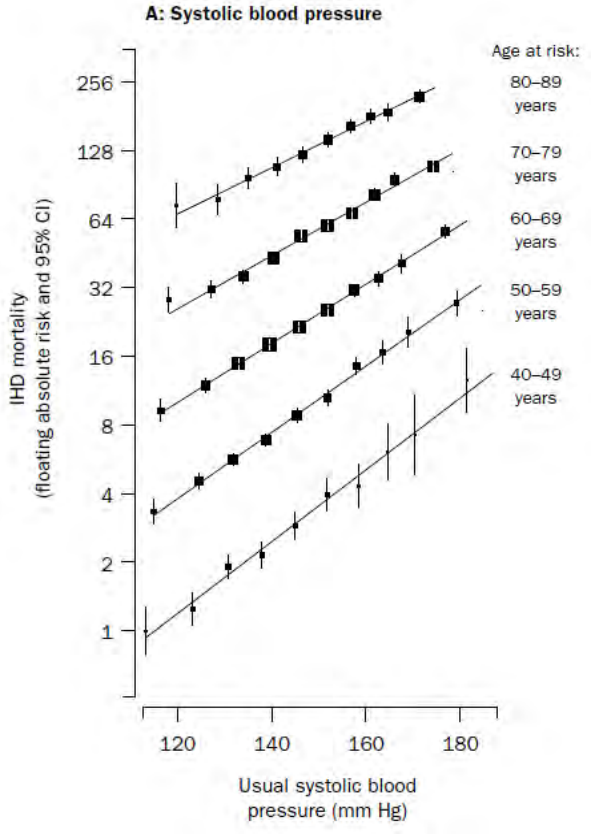
Why focus on risk factors?

- Blood pressure is strongly and directly related to vascular and overall mortality
- Every 20 mm Hg increase in systolic BP leads to a doubling of the risk of death from heart attack or stroke
- Risk doubles with 10 mm Hg increase in diastolic BP

Meta analysis of 61 studies with 1 million patients

Lewington et al. Lancet 2002;360:1903-1913.



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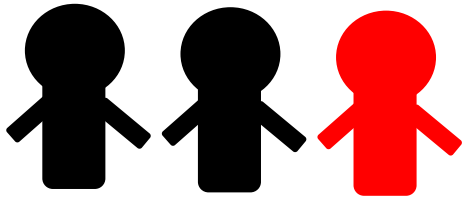
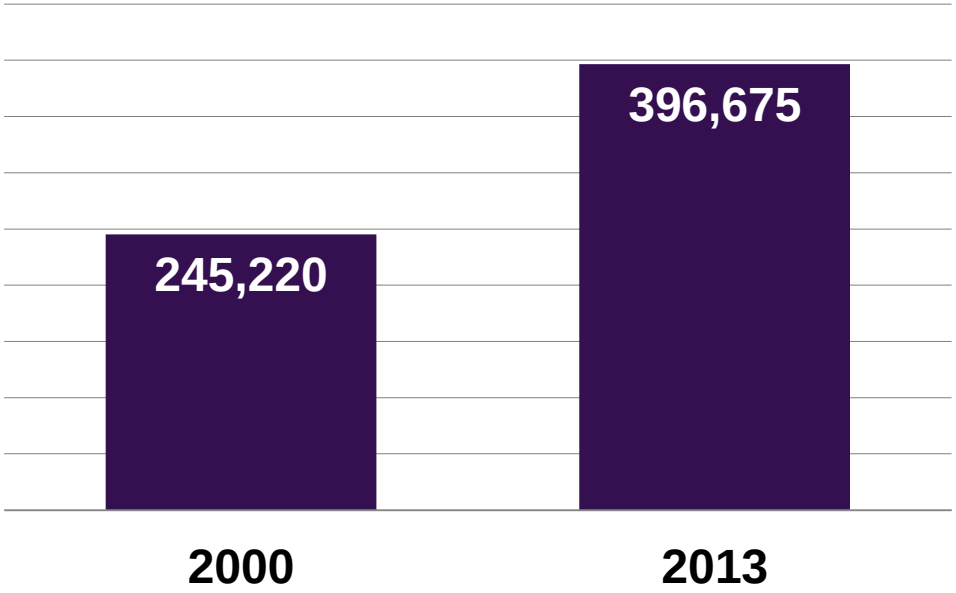


80 million (1 in 3) American adults have high blood pressure

46% are uncontrolled

Most adults with uncontrolled hypertension have health insurance and a usual source of care

62% increase in annual deaths related to hypertension



Source: CDC and AHA

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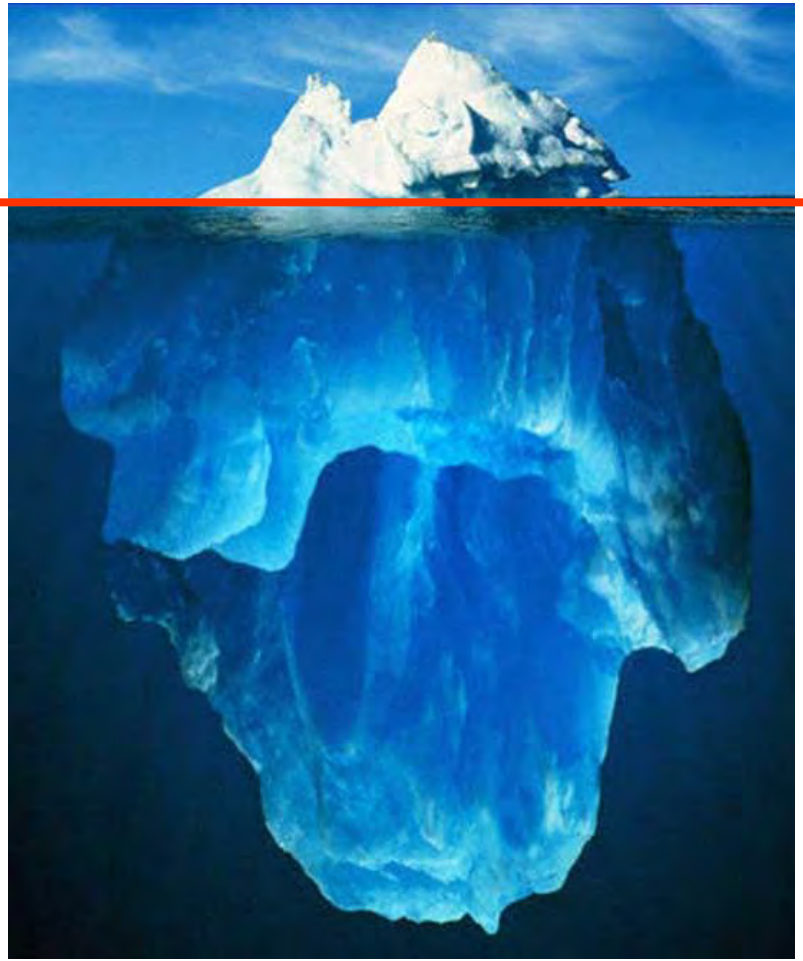

29 million

Americans have diabetes

86 million

American adults have prediabetes

That's more than 1 out of 3 adults

9 out of 10 adults with prediabetes don't know they have it

Source: CDC

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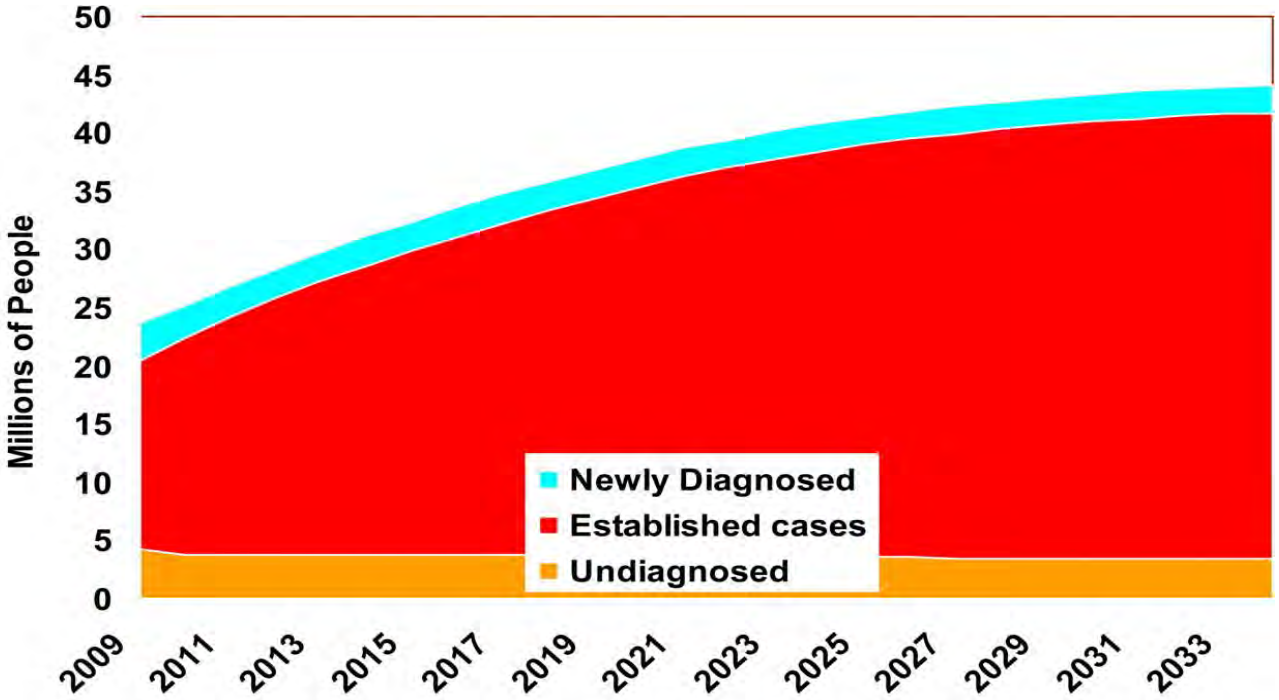
Projected cases of diabetes in the U.S.



People with diabetes are nearly twice as likely to have cardiovascular disease and to die from heart attack or stroke.

Source: Diabetes Population Cost Model

Huang et al. Diabetes Care 2009;32:2225-2229.

American Diabetes Association.

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We need to develop solutions that…

- Summarize the evidence and best practices
- Improve assessment and measurement
- Connect practices with community-based resources
- Promote a culture of teamwork and reliability
- Can be used by busy physicians and care teams

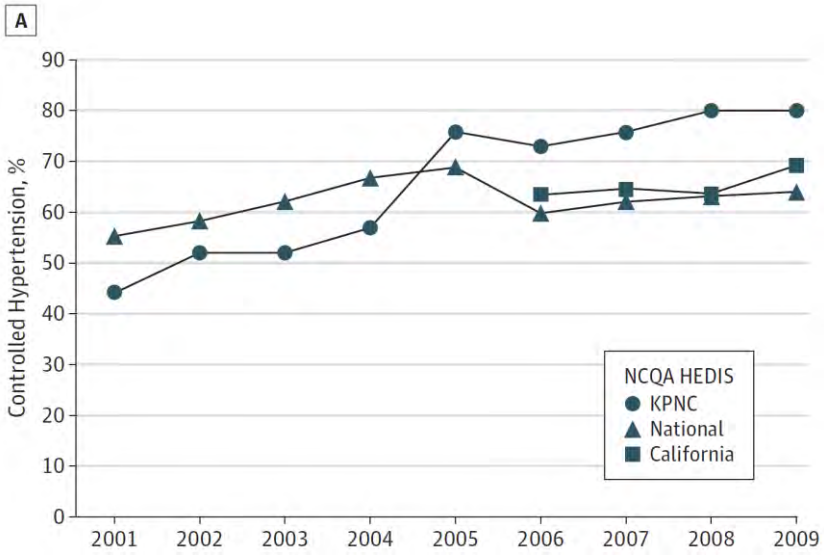
Large-scale improvement is possible

HTN control improved from 43% to 80% over 8 years due to:

- Measuring and reporting BP control rates using a registry
- Sharing best practices
- Using practice guidelines
- Following-up abnml BP readings
- Single-pill combination therapy

N = 349,937 → 652,763

Figure 1. National Committee for Quality Assurance (NCQA) Healthcare Effectiveness Data and Information Set (HEDIS) Hypertension Control Rates



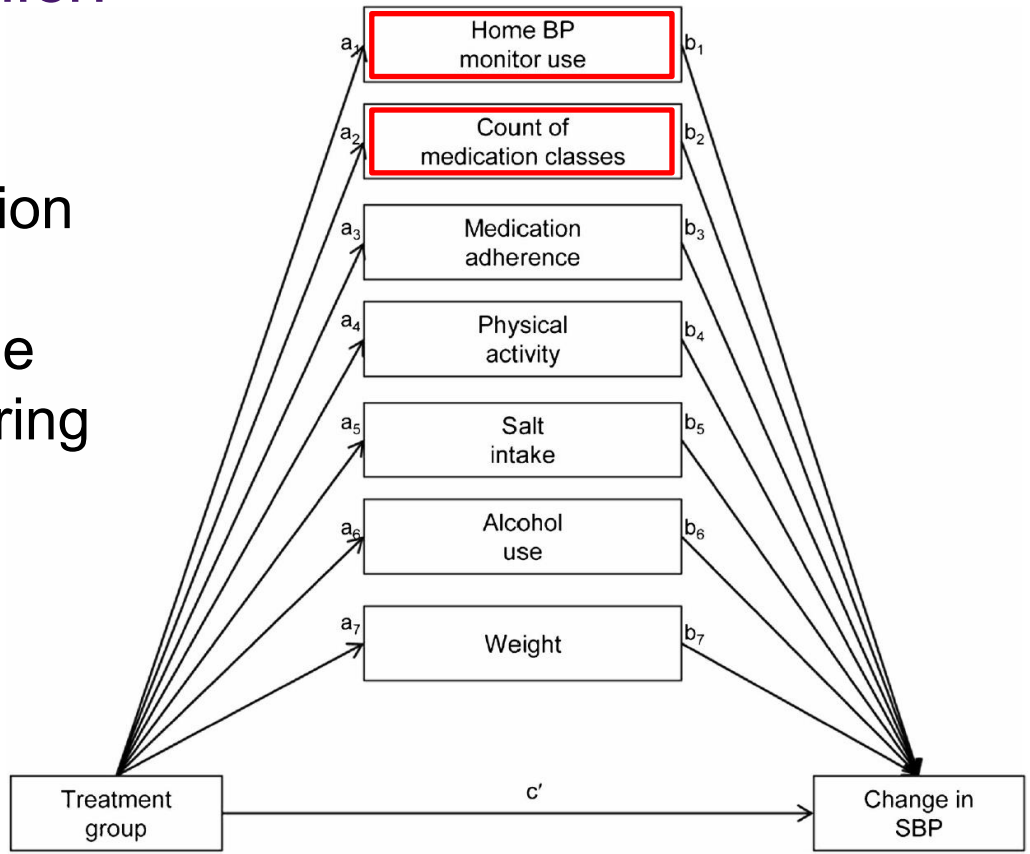
Jaffe et al. JAMA 2013;310:699-705.

We now understand which interventions work

"About half of the intervention effect in this multifaceted trial…was attributable to the combination of self-monitoring and medication intensification."

Mediation analysis using path analytic models

Margolis et al. J Gen Intern Med. 2015 May 8. [Epub ahead of print]



Evidence-based best practices

- Obtaining accurate and reliable BP measurements
- Eliminating missed opportunities to escalate Rx
- Ensuring prompt and adequate follow-up
- Supporting patients and families in self-management
- Improving teamwork

The 2015 M.A.P. checklists

Measure accurately

When *screening* patients for high BP:

- ❑ Use a validated, automated device to measure BP
- ❑ Use the correct cuff size on a bare arm
- ❑ Ensure patient is positioned correctly

If screening BP is ≥140/90 mm Hg, obtain a *confirmatory* measurement:

- ❑ Repeat *screening* steps above
- ❑ Ensure patient has an empty bladder
- ❑ Ensure patient has rested quietly for at least five minutes
- ❑ Obtain the average of at least three BP measurements

Act rapidly

If a patient has BP ≥140/90 mm Hg confirmed:

- ❑ Use evidence-based protocol to guide treatment
- ❑ Re-assess patient every 2-4 weeks until BP is controlled
- ❑ Whenever possible, prescribe single-pill combination therapy

Partner with patients, families and communities

To empower patients to control their BP:

- ❑ Engage patients using evidence-based communication strategies
- ❑ Help patients accurately self-measure BP
- ❑ Direct patients and families to resources that support medication adherence and healthy lifestyles

Measure accurately

Screening checklist

When *screening* patients for high blood pressure:

- ☐ Use a validated, automated device to measure BP[1]
- ☐ Use the correct cuff size on a bare arm[2-10]
- ☐ Ensure patient is positioned correctly[2,3,11-19]

Confirmatory checklist

If screening blood pressure is ≥140/90 mm Hg, obtain a *confirmatory* measurement:

- ☐ Repeat *screening* steps above
- ☐ Ensure patient has an empty bladder[2,3,20]
- ☐ Ensure patient has rested quietly for at least five minutes[2,3,21,22]
- ☐ Obtain the average of at least three BP measurements[2,3,23]

Evidence-based tips for correct positioning

- Ensure patient is seated comfortably with:
- Back supported
- Arm supported
- Cuff at heart level
- Legs uncrossed
- Feet flat on the ground or supported by a foot stool
- No one talking during the measurement

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These checklists are not intended to be comprehensive. Additions and modifications to fit local practice are encouraged.

Act rapidly

If a patient has blood pressure ≥140/90 mm Hg confirmed:

- ☐ Use evidence-based protocol to guide treatment[24-26]
- ☐ Re-assess patient every 2-4 weeks until BP is controlled[27-29]
- ☐ Whenever possible, prescribe single-pill combination therapy[30-32]

Evidence-based protocols typically include

- Counsel on and reinforce lifestyle modifications
- Ensure early follow-up and add preferred medications in a step-wise fashion, until BP is controlled
- For most patients, give preference to:
  - Thiazide diuretics
  - *Dihydropyridine* calcium channel blockers
  - ACE inhibitors (ACEI) or
  - Angiotensin receptor blockers (ARB)
- Do not prescribe both ACEI and ARB to same patient
- If BP ≥160/100 mm Hg, start therapy with two medications or a single pill combination

Evidence-based tips to help understand and implement key interventions

References on back

Partner with patients, families and communities

To empower patients to control their blood pressure:

- ☐ Engage patients using evidence-based communication strategies[33-35]
- ☐ Help patients accurately self-measure[36,37]
- ☐ Direct patients and families to resources that support medication adherence and healthy lifestyles

Evidence-based communication strategies include

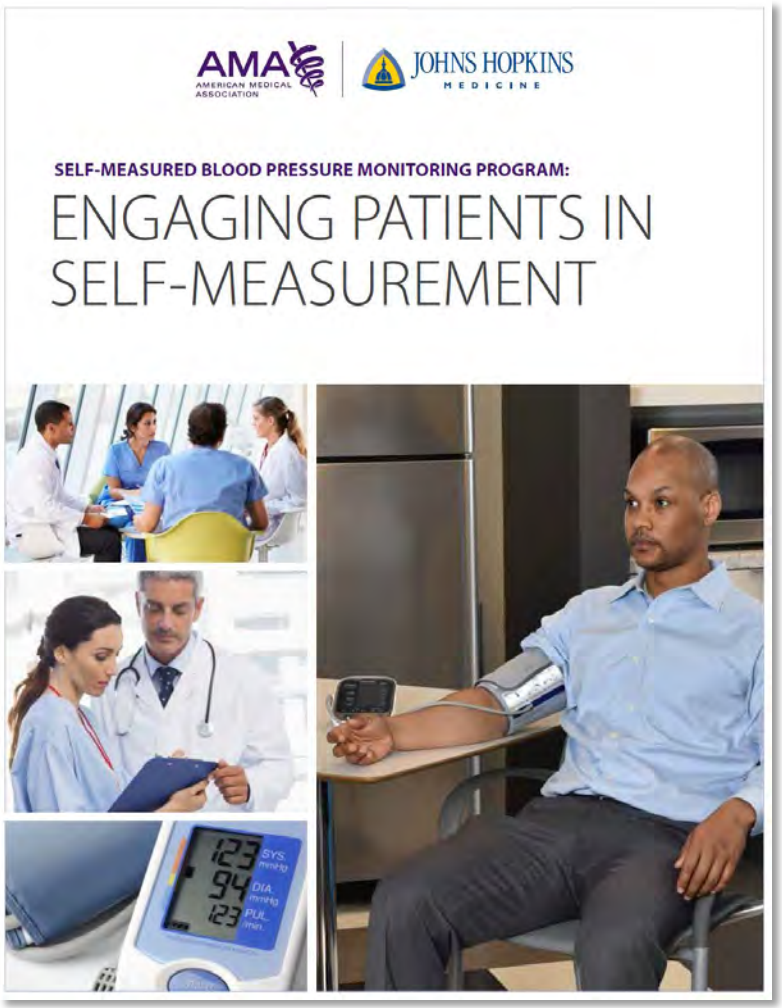
- Begin with *open-ended questions* about adherence,including recent medication use
- *Explore* reasons for possible non-adherence or a single pill combination
- *Elicit* patient views on options and priorities to customize a care plan for each patient
- Remain *non-judgmental* at all times
- Use *teach-back* to ensure understanding of the care plan

Evidence-based tips for patient self-measurement of BP

- Instruct patient to measure BP accurately using a validated, automated device and correct positioning for measurement
- Ask patient to record ≥2 morning BP measurements and ≥2 evening BP measurements for ≥ 4 consecutive days between office visits
- Develop a systematic approach to ensure patients can act rapidly to address elevated BP readings between office visits
- Counsel patients that self-measured BP ≥135/85 mm Hg is considered elevated

Evidence-based lifestyle changes to lower BP include

- Following the DASH diet, which is rich in fruits, vegetables and whole grains; low-fat dairy, poultry, fish and plant-based oils; and limits sodium, sweets, sugary drinks, red meat and saturated fats
- Engaging in moderate physical activity, such as brisk walking, for 40 minutes a day at least four days a week
- Maintaining a healthy body mass index (BMI)
- Limiting alcohol to ≤2 drinks/day in men, ≤1 drink/day in women



SMBP monitoring program

- Guidance for physicians, care teams, patients and family members
- Training and educational materials
- Instructions for ‘loaner program’

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Blood pressure measurement:
Measure accurately

Screening for high blood pressure

- Use a validated, automated device to measure BP
- Use the correct cuff size on a bare arm
- Ensure the patient is positioned correctly

If initial blood pressure is ≥ 140/90 mm Hg, obtain a confirmatory measurement

- Repeat above steps
- Ensure the patient has an empty bladder
- Ensure the patient has rested quietly for at least five minutes
- Obtain the average of at least three BP measurements

Evidenced-based tips for correct positioning

- Ensure the patient is seated comfortably with:
  1. Back supported
  2. Legs uncrossed with feet flat on the floor/ supported with a stool
  3. Arm supported with the BP cuff at heart level
- Remain quiet: No one should be talking during the measurement

IHO: BP **Measure accurately.** Act rapidly. Partner with patients, families and communities.

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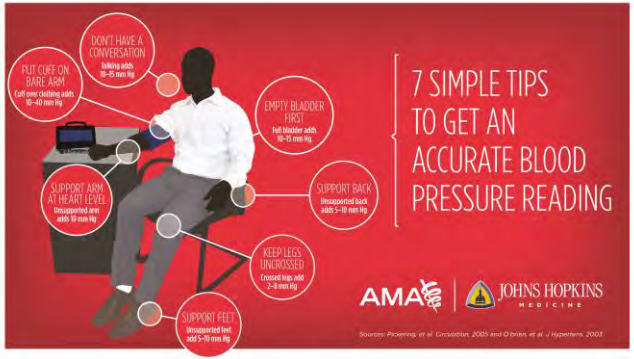
Technique quick-check

General information												
Site name:				Date:								
Observer name(s):				Observation location (clinic, unit, etc.):								
	Patient #1			Patient #2			Patient #3			Patient #4		
Device used	Yes	No	Comments	Yes	No	Comments	Yes	No	Comments	Yes	No	Comments
1. Used a manual device												
2. Used an automated device												
Additional notes on availability, accessibility, quality and/or use patterns of blood pressure measurement devices in the practice (optional):												
Patient preparation and positioning	Yes	No	If no, why not?	Yes	No	If no, why not?	Yes	No	If no, why not?	Yes	No	If no, why not?
1. Patient in the correct position …												
1.1. Seated with back supported												
1.2. Feet flat on the floor or footstool												
1.3. Legs uncrossed												
1.4. Arm bare												
1.5. Arm supported												
1.6. Arm at heart level												
2. Cuff used is correct size*												
If this is a confirmatory measurement (that is, a repeat measurement), then also check the following…												
3. Was the patient asked to empty his/her bladder prior to the repeat measurements?												
4. Did the patient rest quietly for at least five minutes (no speaking or texting) before the repeat measurement?												
5. Were at least three more measurements obtained?												
Additional notes on issues related to patient preparation, positioning and cooperation with use of technique (optional):												



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Working with the AMA to improve BP control

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	A1C (percent)	Fasting plasma glucose (mg/dL)	Oral glucose tolerance test (mg/dL)
Diabetes	6.5 or above	126 or above	200 or above
Prediabetes	5.7 to 6.4	100 to 125	140 to 199
Normal	About 5	99 or below	139 or below

Definitions: mg = milligram, dL = deciliter
For all three tests, within the prediabetes range, the higher the test result the greater the risk of diabetes.

Source: NIDDK

Prediabetes: a reversible condition in which plasma glucose levels are above normal but not high enough to diagnose type 2 diabetes

- >5 times higher risk of developing type 2 diabetes
- Increased risk of cardiovascular disease and death

Source: CDC and ADA.

The Diabetes Prevention Program Research Group

- NIH-funded 3-arm RCT (N=3,234) comparing placebo vs metformin vs intensive lifestyle counseling
- Lifestyle: ↓ diet, ↑ physical activity
- Incidence of diabetes

Placebo	11.0 cases/100 person yr
Metformin	7.8 (31% reduction)
Lifestyle	4.8 (58% reduction)

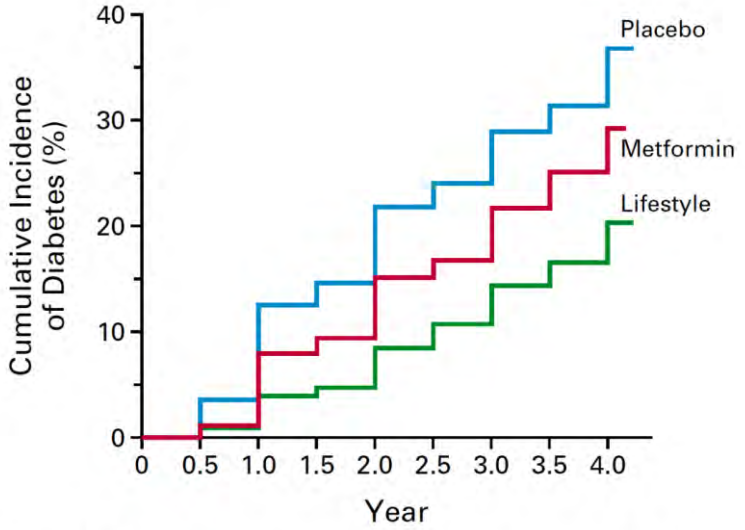

Figure 2. Cumulative Incidence of Diabetes According to Study Group.

Knowler et al. N Engl J Med 2002;346:393-403.

DPP study: lifestyle intervention

- Goal: ≥7% weight loss (50% achieved goal at 24 wks)
- Low cal, low fat diet + mod physical activity ≥150 min/wk
- 24-wk, 16-lesson curriculum taught 1:1 by case managers followed by monthly sessions to reinforce behavior change
- Extent of weight loss predictive of ↓ in diabetes risk
- ↓ BP, ↓ TG, ↓ meds for HTN/hyperlipidemia vs metformin

DPP Research Group. Diabetes Care 2002;25:2165-2171.
Hamman et al. Diabetes Care 2006;29:2102–2107.
Ratner et al. Diabetes Care 2005;28:888-894.

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Making the DPP scalable and affordable

- Group-based lifestyle intervention in a clinical setting
- Group-based lifestyle intervention in a community setting with non-clinicians as coaches
- Use of self-directed DVD with minimal coaching via email
- Online, group-based lifestyle intervention + email coaching
- Comparable results with surrogate end point of wt loss

Amundson et al. Diabetes Educator 2009;35;209-223.
Ackermann et al. Am J Prev Med 2008;35:357-363.
Ma et al. JAMA Intern Med 2013;173:113-121.
McTigue et al. Telemedicine and e-Health 2009;15:851-858.
Sepah et al. Diabetes Educator 2014;40:435-443.

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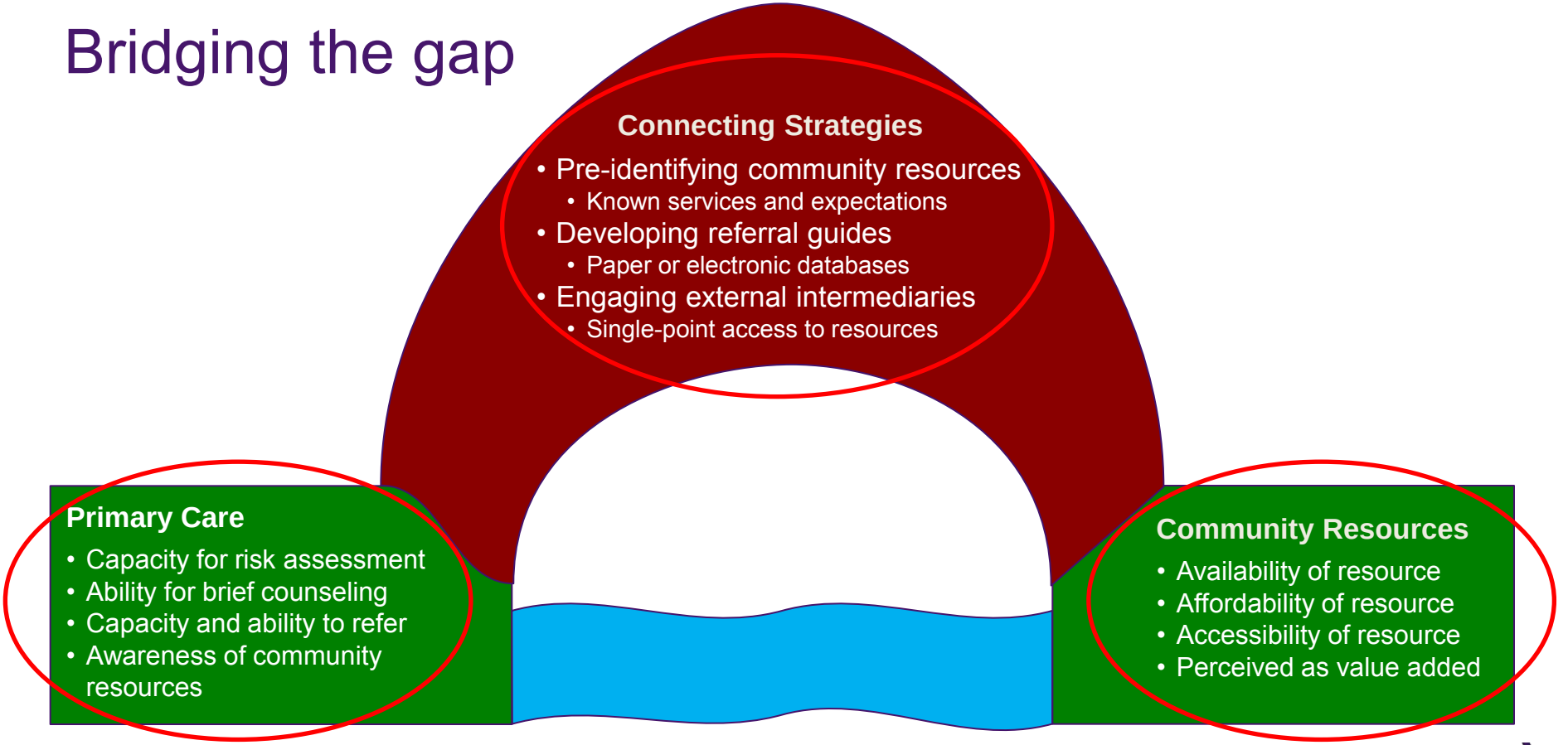
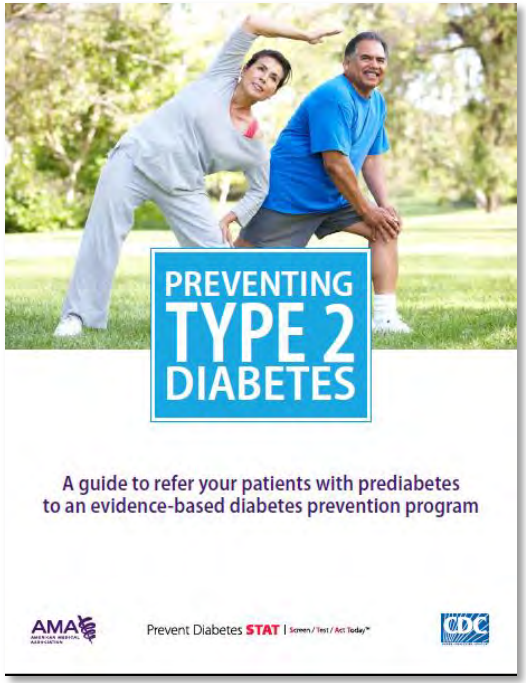
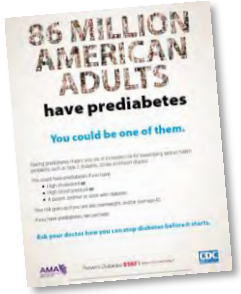
Bridging the gap



Etz et al. Am J Prev Med 2008;35(Suppl. 5):S390-S397.





Tools for primary care:

- Engage clinical care teams
- Identify high-risk patients
- Educate and engage patients
- Connect with programs
- Refer to local programs

Connecting strategies:

- Clarify DPP expectations
- Referral guide (online)
- Convene stakeholders

Retrospective prediabetes identification

MEASURE

Query EMR or patient database every 6–12 months using the following criteria:

A. Inclusion criteria:
- Age ≥18 years **and**
- Most recent BMI ≥24 (≥22 if Asian) **and**
- A positive lab test result within previous 12 months:
  - HbA1C 5.7–6.4% (LOINC code 4548-4) **or**
  - FPG 100–125 mg/dL (LOINC code 1558-6) **or**
  - OGTT 140–199 mg/dL (LOINC code 62856-0) **or**
- History of gestational diabetes (ICD-9: V12.21)

B. Exclusion criteria:
- Current diagnosis of diabetes (ICD-9: 250.xx) **or**
- Current Insulin use

Generate a list of patient names with relevant information

ACT

Use the patient list to:

A. Contact patients to inform of risk status, explain prediabetes, and share info on diabetes prevention programs, **and/or**

B. Send patient info to diabetes prevention program provider
- Program coordinator will contact patient directly, **and**

C. Flag medical record for patient's next office visit

PARTNER

Discuss program participation at next visit

Working with the AMA to prevent diabetes in a busy practice

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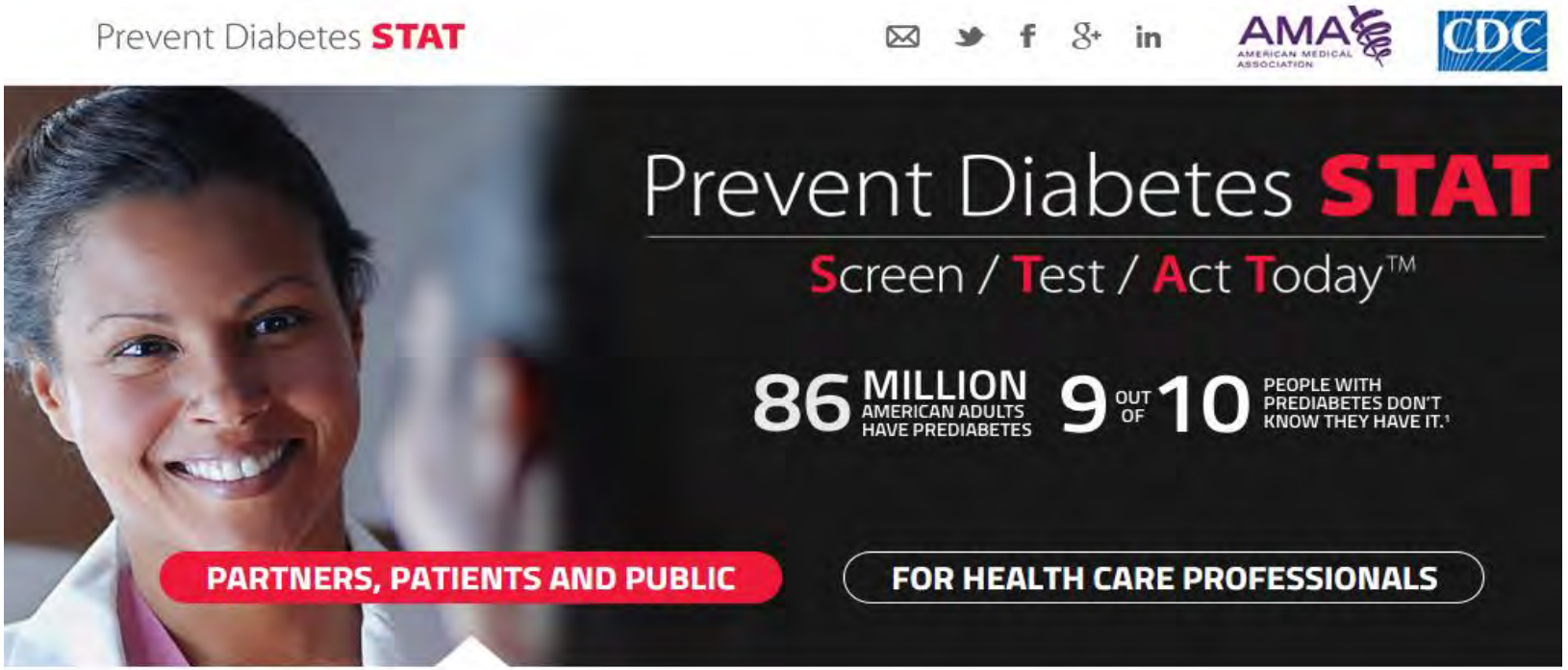
preventdiabetesstat.org



WHAT YOU SHOULD KNOW ABOUT PREDIABETES

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The 5 essentials for success

- High awareness of prediabetes and lifestyle interventions
- Sufficient availability of credible, evidence-based programs
- Local employers and insurers willing to pay for program participation (and for screening/testing/referral if needed)
- Clinical practices willing and able to screen, test and refer
- Programs able to efficiently enroll and engage participants

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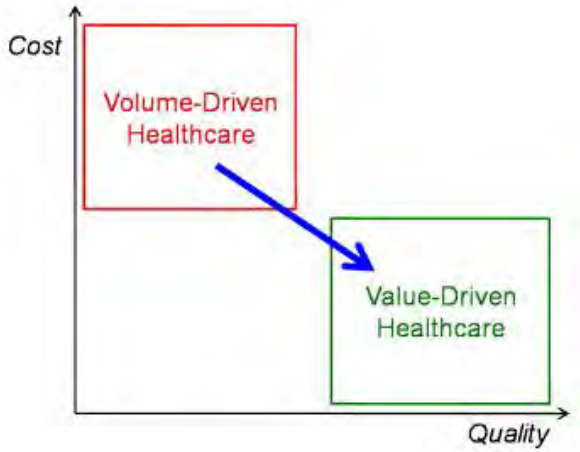
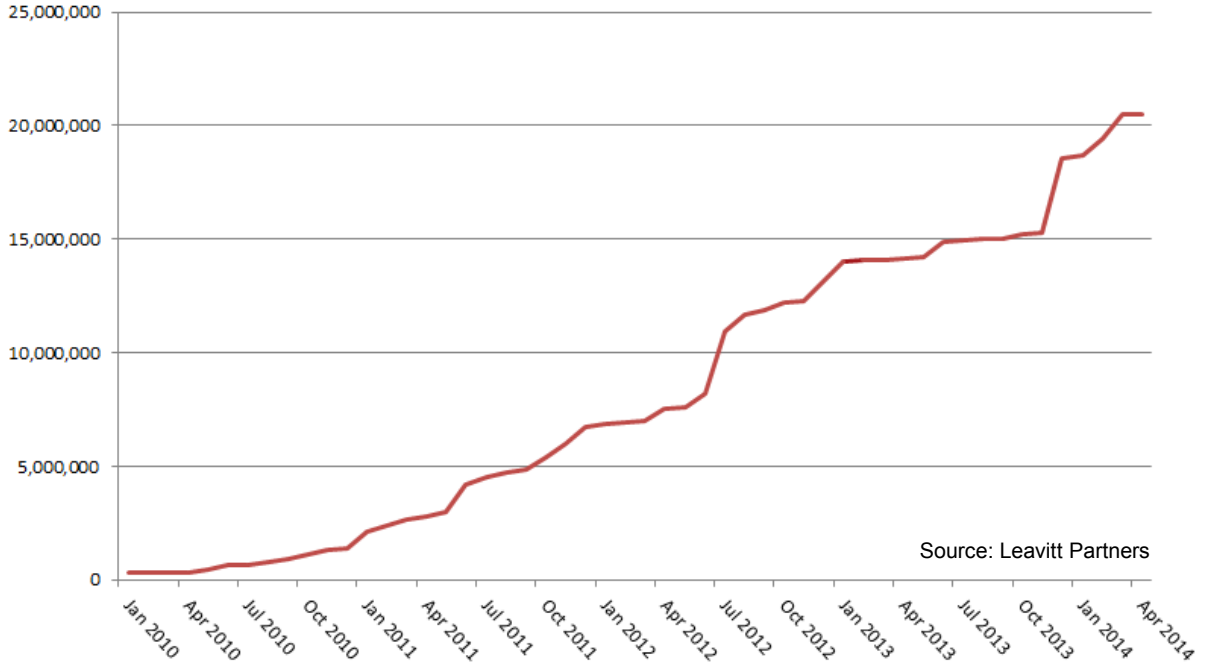
CNBC Monday, 26 Jan 2015 | 12:30 PM ET

Big change: Feds to tie more Medicare payments to 'value'

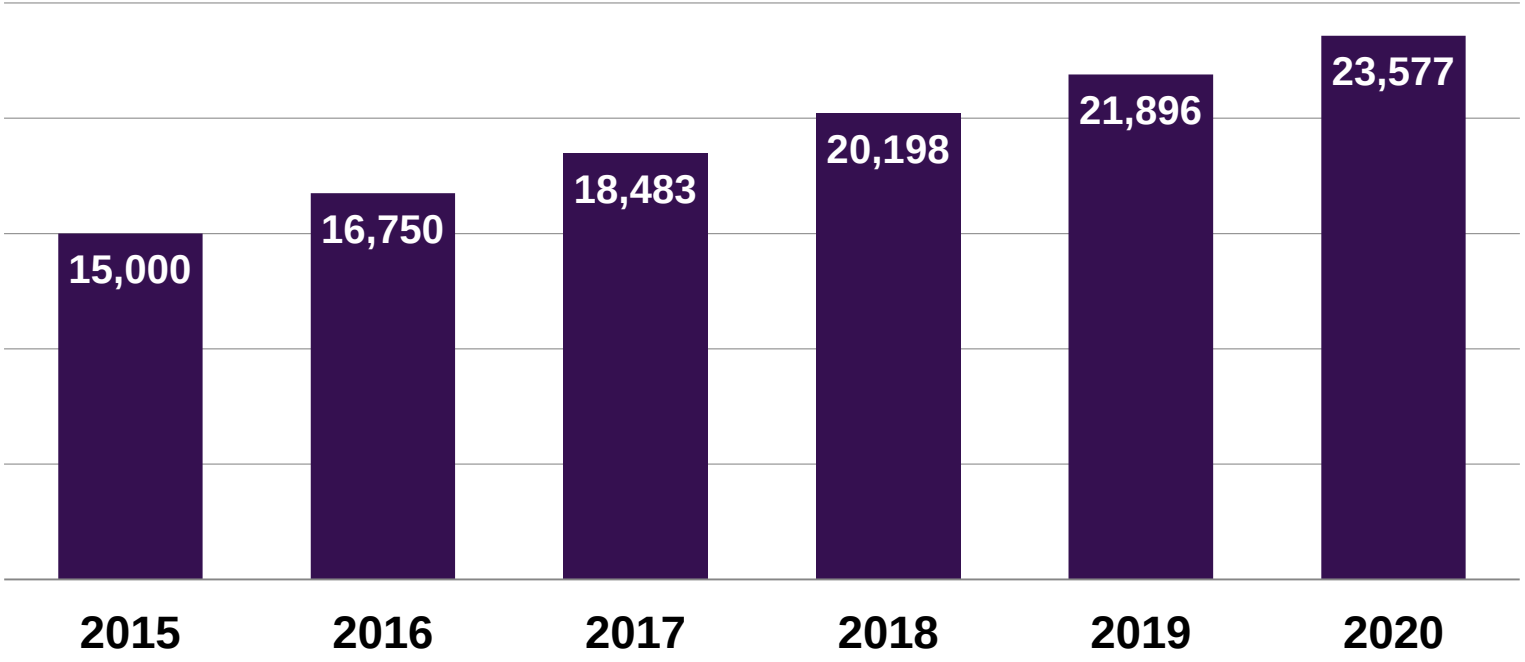


Health care is evolving rapidly

Growth of ACO covered lives over time



Over the next 5 years, a typical large clinical practice could experience a 57% increase in the number of patients with diabetes



Based on a panel size of approximately 100,000 patients

Slide courtesy of Ronald T. Ackermann, MD, MPH, Northwestern University Feinberg School of Medicine

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Alignment with NCQA PCMH standards

- The Practice Team
- Population Health Management
  - Must-Pass: Use data for population management
  - Critical-Factor: Implement evidence-based decision support
- Care Management and Support
  - Critical-Factor: Identify patients for care management
  - Support self-care and shared decision making
- Performance Measurement and Quality Improvement
  - Measure clinical quality performance

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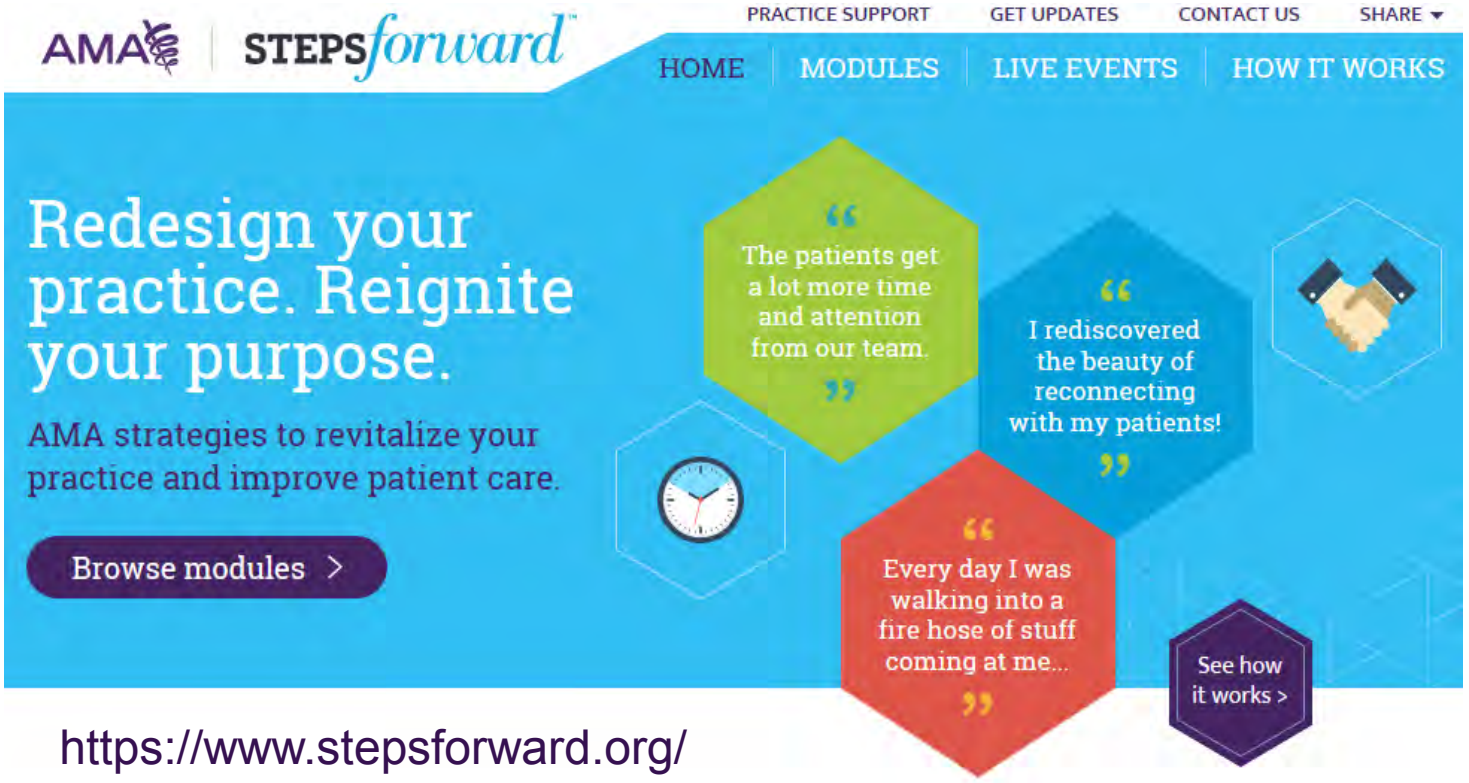
Alignment with MU stage 1 and 2

- Generate patient lists based on demographics, vital signs, lab results or diagnoses (problem list)
- Implement clinical decision support to identify patients with prediabetes or uncontrolled hypertension
- Send patient reminders; identify patient-specific educational resources
- Use secure protocols for transmitting referral information

STEPS Forward modules on hypertension and prediabetes

- One-hour CME introduction to tools; free for all to use



https://www.stepsforward.org/

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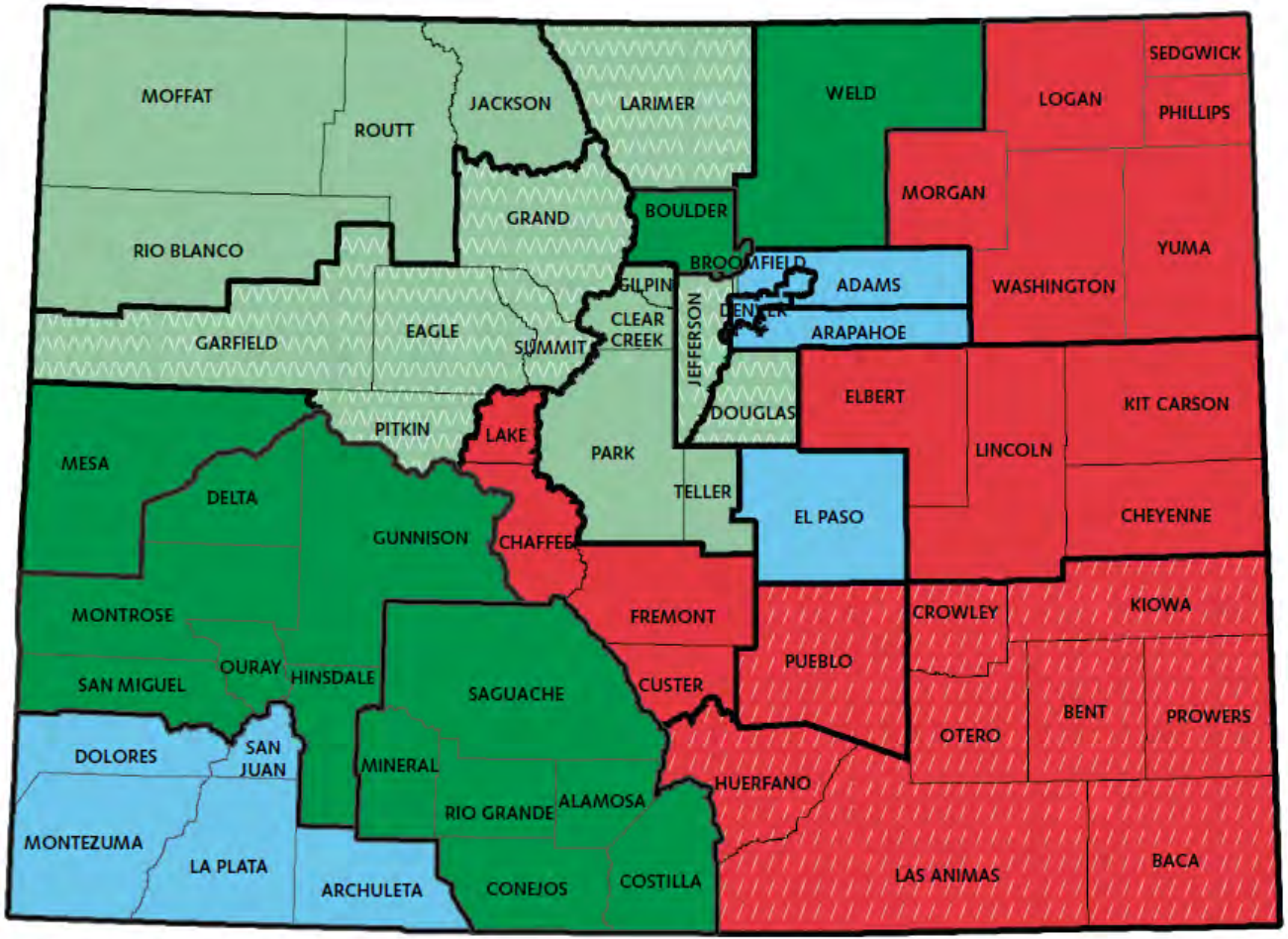
Colorado: things to celebrate

- Ranked 8th healthiest state on America's Health Rankings®
- From 2013 to 2014, diabetes prevalence decreased from 7.4% to 6.5% of adults, the lowest rate in the nation
- Since 1990, cardiovascular deaths decreased by 41%
- Medicaid expansion, 1305 funding
- Multiple physician sponsored ACOs

Sources: America's Health Rankings®, CDC, Leavitt Partners

Diabetes prevalence by geographic region, Colorado, 2010-2011.



Lowest quartile (3.3-5.0%)

Second quartile (5.1-6.4%)

Third quartile (6.5-7.7%)

Highest quartile (7.8-13.2%)

Statistically lower than average

Statistically higher than average

State average: 6.4% (95% C.I.:6.0-6.8)

Southeastern Colorado bears the largest burden of diabetes, with prevalence as high as 13%, almost twice the state average and similar to the highest nationally ranked state.

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Vice President, Improving Health Outcomes
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